2 666
F75
Sample

[The Copyright of Articles in this Journal is Reserved.]

PUBLIC LIBRARY,
DETROIT, MICH.
MAY 8 1890

CONTENTS OF No. XLV.

Art.		Page
I.	The Illuminated Disc of the Moon. By Lieut.-Colonel A. W. Drayson, R.A., F.R.A.S.	1
II.	Railway Accidents. By Fred. Chas Danvers, Assoc. Inst. C.E.	7
III.	Human Levitation; illustrating certain Historical Miracles	31
IV.	The Boundary between Man and the Lower Animals	61
V.	Science, her Claims, Position, and Duties	75
VI.	The Spectroscope in its Application to Mint Assaying. By Alexander E. Outerbridge, jun.	79

NOTICES OF SCIENTIFIC WORKS.

Fiske's "Outlines of Cosmic Philosophy" 93
Lloyd's "A Treatise on Magnetism, General and Terrestrial" . 97
Mivart's "The Common Frog" 99
Gore's "A Glossary of Fossil Mammalia" 101
Blake's "Sulphur in Iceland" 102
Pickering's "Elements of Physical Manipulation" 104

CONTENTS.

PAGE

Callard's "The Chemistry of Fermentation in the Process of Bread Making" 105

"Transactions of the Royal Society of Victoria," Vol. x. . . . 106

Laurencin's "La Pluie et le Beau Temps" 108

Jannettaz's "Les Rochers; Description de leurs Elements; Methode de Determination" 109

Parville's "Causeries Scientifiques" 110

PROGRESS IN SCIENCE.

Including Proceedings of Learned Societies at Home and Abroad, and Notices of Recent Scientific Literature.

MINING 112

METALLURGY 113

MINERALOGY 114

GEOLOGY 116

PHYSICS 118

[*The Copyright of Articles in this Journal is Reserved.*]

CONTENTS OF No. XLVI.

ART.		PAGE
I.	NIAGARA. GLACIAL AND POST-GLACIAL PHENOMENA. By Thomas Belt, F.G.S.	135
II.	HEREDITY	156
III.	THE LATE TRANSIT OF VENUS. By Richard A. Proctor, Author of "Past and Coming Transits" . . .	169
IV.	THE QUESTION OF ORGANIC EVOLUTION	188
V.	SELENOGRAPHY: ITS PAST, PRESENT, AND FUTURE. By E. Neison, F.R.A.S., &c., &c.	202
VI.	MODERN ENTOMOLOGY	224
VII.	AERIAL LOCOMOTION. By Professor Coughtrie . .	234

NOTICES OF SCIENTIFIC WORKS.

Hartwig's "The Aërial World: a Popular Account of the Phenomena and Life of the Atmosphere." 252

Lockyer's "Science Primers. Astronomy." 254

Weinhold's "Introduction to Experimental Physics, Theoretical and Practical; including Directions for Constructing Physical Apparatus, and for Making Experiments." . 255

Angell's "Elements of Magnetism and Electricity." . . . 257

Angell's "Elements of Animal Physiology, chiefly Human, with Hints on Practical Work, Dissection, &c." . . . 257

Sidgwick's "The Methods of Ethics." 258

CONTENTS.

PAGE

Budd's "The Transit of Venus: its Meaning and Use." . . 259

Lubbock's "The Origin of Civilisation and the Primitive Condition of Man: Mental and Social Condition of Savages." 260

Drysdale's "The Protoplasmic Theory of Life." 260

Foster's "The Elements of Embryology." 261

Heath's "An Elementary Exposition of the Doctrine of Energy." 262

Jardine's "The Elements of the Psychology of Cognition." . 263

Proctor's "Transits of Venus." 264

Page's "Economic Geology, or Geology in its Relations to the Arts and Manufactures." 264

CORRESPONDENCE.—Respecting the Phenomena called Spiritual . 266

PROGRESS IN SCIENCE.

Including Proceedings of Learned Societies at Home and Abroad, and Notices of Recent Scientific Literature.

MINING 271

METALLURGY 272

MINERALOGY 273

GEOLOGY 274

PHYSICS 276

[*The Copyright of Articles in this Journal is Reserved.*]

CONTENTS OF No. XLVII.

ART.		PAGE
I.	VARIATION IN THE OBLIQUITY OF THE ECLIPTIC. By Colonel A. W. Drayson, R.A., F.R.A.S.	279
II.	THE RIGHTS OF THE THINKER	297
III.	ANOTHER VIEW OF LEVITATION	302
IV.	THE HISTORY OF OUR EARTH	309
V.	DIFFICULTIES OF "DARWINISM"	322
VI.	THE MECHANICAL ACTION OF LIGHT. By William Crookes, F.R.S., &c.	337

NOTICES OF SCIENTIFIC WORKS.

Fraser and Dewar's "The Origin of Creation." 353
Cameron's "A Manual of Hygiene." 356
Crowell's "The Identity of Primitive Christianity and Modern Spiritualism." 357
Plympton's "The Blowpipe." 359
Greenwood's "A Manual of Metallurgy." 359
Goldsworthy's "The Best Mining Machinery." 360
Girdlestone's "Number, a Link between Divine Intelligence and Human." 361
Marcet's "An Experimental Inquiry into the Nutrition of Animal Tissues." 363
Meunier's "La Terre Vegetale." 364
"Report of the Commissioners of Agriculture for the Year 1872." 366
"Report of the Sanitary Committee of the Board of Health on the Concentration and Regulation of the Business of Slaughtering Animals in the City of New York." . . 367

CONTENTS.

PAGE

"The Safe Use of Steam." 367
Thomson's "Principes de Science Absolue." 368
Holland's "Fragmentary Papers on Science and Other Subjects." 371
Smith's "On a Peculiar Fog seen in Iceland, and on Vesicular Vapour." 373
Collins's "Principles of Metal Mining." 374
McCoy's "Prodromus of the Palæontology of Victoria." . . 375
Keene's "A Handbook of Hydrometry." 375
Churchill's "Consumption and Tuberculosis." 376
Sachs's "Text-Book of Botany, Morphological and Physiological." 378
Forbes's "The Transit of Venus." 379
Cox's "The Province of Psychology." 380
Carpenter's "Principles of Mental Physiology." 382
Downing's "Elements of Practical Hydraulics." 385
Downing's "Elements of Practical Construction." 386

CORRESPONDENCE.—The Pole Star and the Pointers. 387

PROGRESS IN SCIENCE.

Including Proceedings of Learned Societies at Home and Abroad, and Notices of Recent Scientific Literature.

MINING 393
METALLURGY 394
MINERALOGY 395
ENGINEERING—CIVIL AND MECHANICAL 396
GEOLOGY 401
PHYSICS 403

[*The Copyright of Articles in this Journal is Reserved.*]

CONTENTS OF No. XLVIII.

ART.		PAGE
I.	ANIMAL DEPRAVITY	415
II.	THE LONGEVITY OF BRAIN-WORKERS. By George M. Beard, A.M., M.D.	430
III.	ON THE CONDITION OF THE ATMOSPHERES OF THE PLANETS, By E. Neison, F.R.G.S., &c.	449
IV.	THE POSSIBILITY OF A FUTURE LIFE	472
V.	THE CHANNEL TUNNEL. By F. C. Danvers, Assoc. Inst. C.E.	486
VI.	THE ARCTIC EXPEDITION OF 1875. By G. F. Rodwell, F.R.A.S., F.C.S.	504

NOTICES OF SCIENTIFIC WORKS.

Helmholtz's "Sensations of Tone as a Physiological Basis for the Theory of Music" 524

Tyndall's "Sound" 527

Tyndall's "Six Lectures on Light" 527

Atkinson's "Natural Philosophy for General Readers and Young People" 528

Irving's "Short Manual of Heat, for the Use of Schools and Science Classes" 528

Gordon's "Elementary Book on Heat" 528

PAGE

Phin's "Practical Hints on the Selection and Use of the Microscope" 529
Hunt's "Ure's Dictionary of Arts, Manufactures, and Mines" . 529
Morgan's "Skull and Brain; their Indications of Character and Anatomical Relations" 531
Higgins's "Digest of the Reported Cases relating to the Law and Practice of Letters Patent for Inventions" . . 533
Dana's "Corals and Coral Islands" 534
Prescott's "Chemical Examination of Alcoholic Liquors" . 536
Broadhead's "Report of the Geological Survey of the State of Missouri" 538
Sprague's "Electricity: its Theory, Sources, and Applications" . 540

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE 543

CORRESPONDENCE.—Aërial Locomotion 546

PROGRESS IN SCIENCE.

Including Proceedings of Learned Societies at Home and Abroad, and Notices of Recent Scientific Literature.

MINING 548

METALLURGY 548

MICROSCOPY 550